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**NEW
FOOD
PLANT**

CONSTRUCTION

FOOD ENGINEERING



COVER STORY

Who's building what, and where? Food plant construction and expansion roll on at an accelerated pace for the third year in a row, according to *Food Engineering's* annual survey.

Pages 75 to 93

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News

13 Industry Report

This month's Report talks about why recycling plastics may be the answer to the problem of diminishing landfills; FDA's Richard Ronk's statement that the responsibility for food safety lies with the processor; how microwave ovens are being used more frequently for cooking frozen vegetables and entrees, not just for reheating leftovers; and the USDA's new policy memo defining the terms "new," "now," "improved," and similar declarations, and how they can be used on approved labeling.

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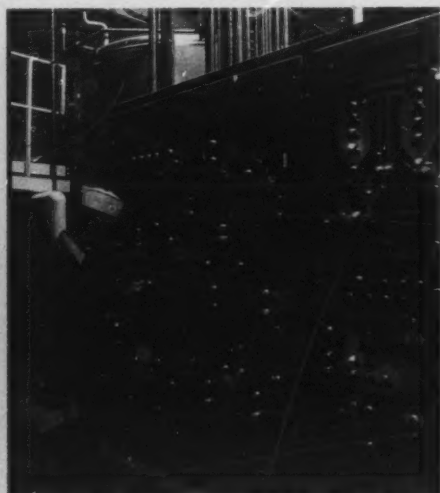
Spurred by high industry profits, healthy sales increases, low interest rates, favorable tax incentives, new technology and a plethora of new products, food-plant construction and expansion continues at a furious pace, as shown in *FE's* tenth annual survey.

95 Expansions and Retrofits

Expanding an existing plant without disrupting production can be more challenging than building a "greenfield" facility.

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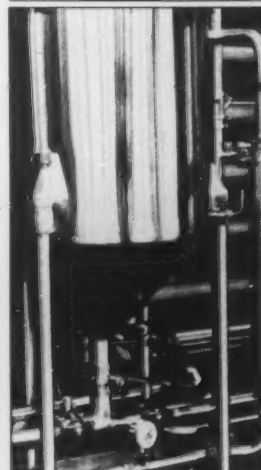
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Special Emphasis

MEMBRANE FILTRATION

Choosing the right filtering equipment can be one of the most important decisions made by a food processor.

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needed to provide complete flexible manufacturing systems. Information from the program should assist food processors in selecting and implementing automation technologies appropriate to their business.

According to Battelle, a number of U.S. and European companies have already joined the program, which is still open for membership at a cost of \$20,000 per company. For additional information on the program, contact Dr. Robert Cobb, Battelle, 505 King Avenue, Columbus, Ohio 43201-2693, (614) 424-3266.

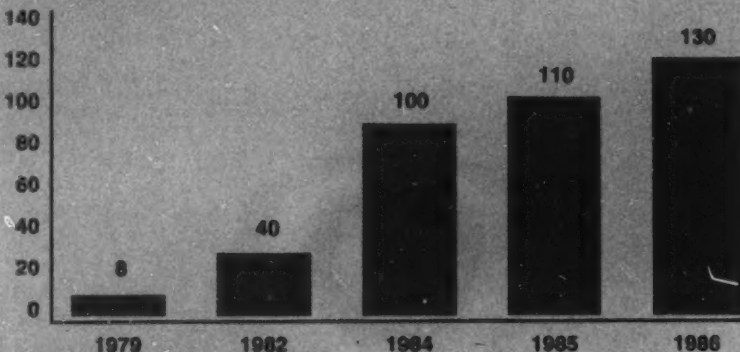
Correction

In our September, 1987 story, *Surimi Products Plant Starts-Up in Minnesota*, the manufacturer of the spiral-belt freezers installed at SeaFest Products was misidentified. The systems were manufactured by Northfield Freezing Systems, Inc., Northfield, MN. *Food Engineering* regrets the error.

Recycling: an alternative to landfills

Pet beverage container recycling

MILLIONS OF POUNDS



As available landfill acreage declines, recycling will become ever more prevalent in local municipalities which must deal with the growing mass of plastic refuse.

At the recent PET/PE Reclamation Processing Technology Seminar held at Rutgers University September

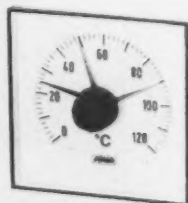
30, more than 300 representatives of government, industry and education

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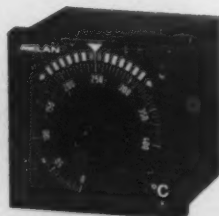
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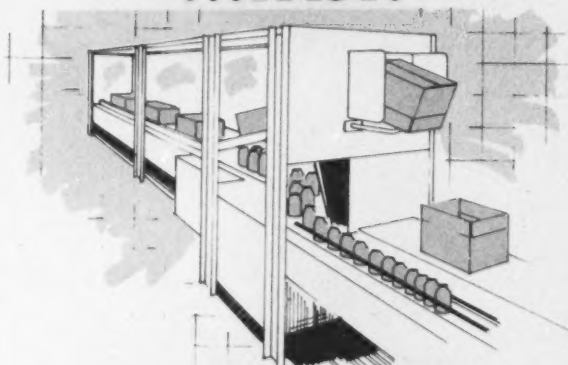
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(Continued from page 19)

met to tackle the ever-growing problem of what to do with the billions of pounds of rigid plastics discarded by consumers each year in the U.S. As landfills close to municipalities and new sites become increasingly more difficult to find, the problem has become more pressing.

The seminar was sponsored by the Plastics Recycling Foundation, the New Jersey Commission on Science and Technology and the Center for Plastics Recycling at Rutgers.

The Center operates its own PET beverage bottle reclamation pilot plant. The plant is currently operating in a sustained test mode at its targeted feed rate of 600 pounds per hour of PET beverage bottles.

Figures cited at the seminar point to a projected production of 55 billion pounds of plastic materials in 1988. Most of this will end up being dumped into landfills unless a better method of handling the solid waste can be found. Since plastics are a non-renewable re-

source, recycling would appear to be a better method of dealing with the refuse than incineration.

The recycling of PET from post-consumer soft drink bottles is seen as a new engineering polymer source. The Center predicts an availability of 700-800 pounds of soft drink bottles (80 percent of which are PET) available for recycling. The recycling goal is 525 million pounds a year. Currently only about 125 million pounds is being handled in this manner, so using an anticipated price of 30-35 cents/pound for the recycled PET, this is an area of projected growth and profit potential.

Market analysis

Robert A. Bennett of the College of Engineering at the University of Toledo, OH, presented his findings: "Market Analysis on Recycled Plastics."

Bennett's research was aimed at pinpointing and understanding the markets for recycled plastics as well as identifying potential products which would be derived from the recycled

materials. It is Bennett's feeling that "market demand for recycled plastics will be a long term factor that will help drive plastics recycling and assure that post-consumer resin scrap has an economic value as possessed by competing materials such as glass and metal."

For those entrepreneurs becoming involved in recycling, the supply of plastics will be virtually unlimited, says Bennett. His presentation forecast that by the end of 1987 more than 50 billion pounds of plastics will be consumed in the U.S., excluding textile applications. In 1986 the figure cited as 49 billion pounds, of which the largest component was polyethylene (high density and low density) which accounted for 32 percent of last year's sales in the U.S. This was followed by polypropylene at 6 billion pounds and polyvinyl chloride at 5.8 billion pounds.

Polyester (thermoplastic and unsaturated) accounted for 2.9 billion pounds, or 6 percent, of last year's

(Continued on page 23)

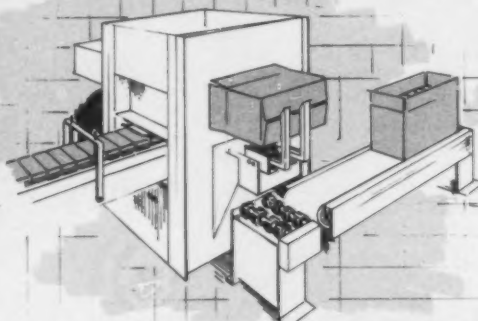
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(Continued from page 21)

sales in the U.S. Because of thermo-plastic's ability to be remelted or extruded into remanufactured products, it is ideal for recycling. Bennett estimates that more than 130 million pounds of polyester, commonly called "PET," beverage containers are being recycled currently in the U.S.

Where are the markets?

Bennett's research has identified several end-use markets for recycled plastics, including fiberfill, currently the primary market for recycled post-consumer PET. Recycled PET is also being used in autobody putty, cultured marble, wood substitution (unsaturated polyester), for various engineering applications, for strapping and as polyurethane foam in building insulation.

Polyethylene when recycled has many uses, including base cups for beverage containers, flower pots, plastic lumber for outdoor furniture, boat docks, toys, pails, pipes and drums.

Mixed plastics, from plastic scrap of

many different types, can be used to manufacture railroad ties and for lumber substitutes for outdoor furniture, posts and farm structures, and car stoppers for parking lots.

History of plastics recycling

The U.S. is well acquainted, and becoming more involved, with recycling. Aluminum containers have long been recycled, as have glass containers. When the PET beverage container was introduced in the U.S. in 1978, recycling began almost immediately, due to the efforts of small entrepreneur recyclers. In 1979, eight million pounds of bottles were recycled. By 1982, 40 million pounds was being recycled; by 1985 110 million pounds of bottles were handled. Bennett's research pointed to an estimated figure for 1986 of 130 million pounds.

Although much more process technology and market research needs to be done before plastics recycling can become an economically viable business, the seminar was proof that steps

are being taken in the right direction. Recycling is not something we can afford to ignore, it is rapidly become the reality of the day.

(This report on plastics recycling was written by Linda K. Freeman, Contributing Editor.)

Targeted Export Assistance announced

USDA has slated 34 projects to receive \$80 million in Targeted Export Assistance (TEA) allocations for fiscal year 1988. The TEA program, authorized by the Food Security Act of 1985, uses surplus stocks from the Commodity Credit Corporation to help U.S. producers finance promotional activities for U.S. agricultural products to counter or offset adverse effects of unfair foreign trade practices.

1988 promotion efforts will cover a wide range of U.S. agricultural commodities including wheat, meat, poultry, seafood and other high-value products. For additional information, call (202) 447-5521.

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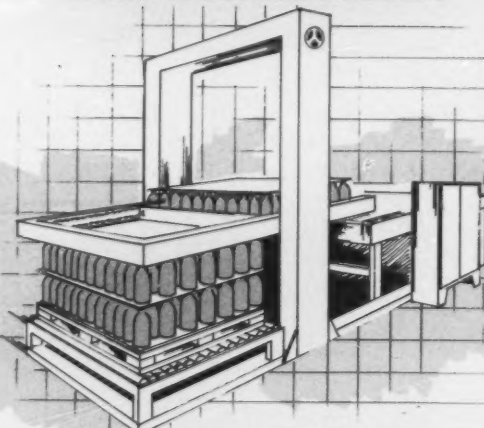
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NEW FOOD PLANTS

10th Annual New Plants Survey

Who's building what, and where? Food plant construction and expansion roll on at an accelerated pace for the third consecutive year.

Food Engineering's 10th annual New Plants Survey—compiled from studies conducted by Conway Data, Inc. (Norcross, GA) and *Food Engineering*—reveals a record 339 projects planned, under construction or started up during the past year, up from the 332 projects recorded last year and continuing the construction boom first reported in 1985, when new plant construction/expansion projects surged to 295 from the 201 listed in 1984. The trend, in fact, has been steadily up since 1983, after plateauing in the early '80s.

Part of this boom may be due to improved reporting techniques, but a 60-percent surge in food-plant construction over three years is no fluke: It confirms *Food Engineering's* "State Of The Industry" reports over the past three years indicating a flourishing industry operating in a healthy economy. "Unit sales increases are needed to build new plants—you can't pay for a new plant with labor savings," notes an engineer from a major A/E firm.

This year's new-plant survey generally confirms industry trends but again contains a surprise or two. One surprise is the number of new plants: 198 of the 339 plants listed—or 58 percent of the total—are new construction as opposed to expansions/renovations. In our 1985 and 1986 studies, the ratio of new plants to expansions/renovations was about 50/50. Another mild surprise is the number of freestanding distribution centers (i.e., not part of a manufac-



turing-plant project). This year, 35 of the 339 projects listed—nearly 10 percent—are warehouse/distribution centers, mostly for frozen and refrigerated products. This seems to confirm the "natural" and convenience-food trends, and the shift away from canned foods to fresh and frozen. The low-calorie/low-cholesterol trend is again apparent in the number of poultry plants: No less than 41—or 12 percent of the total—are poultry plants, on top of the 23 reported in 1986 and 21 in 1985.

New technology is apparent in the new General Foods aseptic-products plant at Mason City, IA; the Westco Drying plant at Desert Hot Springs, CA (acoustic drying); the American Maize cyclodextrin plant at Hammond, IN; the Nutri-Cheese analog cheese plant at Oak Park, IL; the New Tech Snacks pasta-snack plant at Joliet, IL; Wornick's microwave-entree at New Braunfels, TX; The Great Lakes Chemical plant at Newport, KY, which will make an unspecified intense sweetener; The SeaFest Products surimi-products plant at Motley, MN (FE, Sept., '87).

The current building boom may cool, however, as interest rates move up. As of October 16, the prime rate stood as high as 9¾ percent, up 2¼ from a year earlier, and further hikes may be in store after the mid-October stock market crash.

New 120,000 sq.-ft. plant operated by Meadowland Creamery, a division of the Kroger Co., started producing fluid milk and orange juice in July, 1987, at Conroe, TX. (Photo: Hixson Architects-Engineers)

CHARLES E. MORRIS
Midwest Editor

(Continued on next page)

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
A							
Adolph Coors	Elkton, VA	Beer pkg., dist.	—	New	95	250	—
Advanced Foods USA	Iowa Falls, IA	—	40	New	—	23	—
Ag Processing	St. Joseph, MO	Edible oil	—	Exp.	3	—	Process Systems, Inc.
Albertson's	Gresham, OR	Groc. dist.	541	New	25.5	—	A. Epstein & Sons
Amalia Food Products	Columbia, SC	—	20	New	—	40	—
American Fructose	Decatur, AL	HFCS	—	Exp.	20	—	—
American-Italian Pasta	Excelsior Spgs., MO	Pasta	150	New	26	65	—
American Maize	Hammond, IN	Cyclodextrins	—	New	—	—	—
American Popcorn	Sioux City, IA	Popcorn	—	Exp.	—	—	Davy McKee
American Soy Products	Saline, MI	Soy milk	—	New	2.9	35	—
A&M Farms	Sandusky, OH	—	91	New	0.6	—	—
Anheuser-Busch	Los Angeles, CA	Beer	—	Renov., exp.	—	—	MK-Ferguson
Anheuser-Busch	Ft. Collins, CO	Beer	1300	New	300	—	MK-Ferguson
Anheuser-Busch	Tampa, FL	Beer	47	Exp.	45	49	Lockwood Greene
Anheuser-Busch	St. Louis, MO	Beer	—	Exp.	—	—	MK-Ferguson
Anheuser-Busch	Newark, NJ	Beer	150	Exp.	150	—	MK-Ferguson, Sverdrup
Anheuser-Busch	Columbus, OH	Beer	—	Renov.	—	—	MK-Ferguson
Anheuser-Busch	Memphis, TN	Bakers yeast	—	New	—	—	—
A. Reich & Sons	Kansas City, MO	Food dist.	139	New	8	135	Fernstrom & Assoc./Summit Bldgs.
Arkansas City Packing	Arkansas City, KS	—	8	Exp.	—	300	—
A. Smith Bowman Distillery	Spotsylvania, VA	Whiskey, vodka	—	New	—	50	—
Atlantic Food Services	Prince Wm., VA	Proc. foods	—	Exp.	10	250	—
Austin Foods	Cary, NC	Snack foods	250	New	30	100	—
B							
Bahlsen of America	Cary, NC	Cookies, crackers	250	Exp.	30	—	—
Balanced Energy	Clinton, IA	Fat pellets (feed)	22	New	5	45	—
Barbara's Bakery	Somoma City, CA	Baked goods	—	Exp.	—	—	—
Beatrice Grocery	Sylvester, GA	Peanut butter	—	New	—	100	—
Beatrice Cheese	Elm Grove, WI	Cheese	—	New	—	300	—
Beaver Street Foods	Jacksonville, FL	Frz. meat & seafood	62	Exp.	2.5	—	The Stellar Group
Beckman Produce	Beloit, WI	Proc. foods	25	New	1	20	—
Beef Specialists Iowa	Hartley, IA	Proc. beef	20	Exp.	1.8	103	—
Bel Cheese	Lawrenceburg, KY	Cheese	—	Exp.	1	30	—
Bell Brands	Santa Fe Spgs., CA	Corn, potato chips	166	New	13.6	—	Austin Co.
Ben & Jerry's Ice Cream	Waterbury, VT	Ice cream	15	Exp.	—	30	St. Onge, Ruff Assoc.
Best Foods	Asheboro, NC	—	—	New	—	—	Fluor Daniel
Best Foods	Bayonne, NJ	Mayo., veg. oil	160	New	80	160	Lockwood Greene
Besnier America	Turlock, CA	Brie cheese	—	New	2	50	L&A Eng. & Equip.
Bicara Ltd.	Los Angeles, CA	Meat products	—	Exp.	—	—	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft.	Type Project	Est. Cost (\$ millions)	Employ- ees	Architects/ Engineers
Biggers Bros.	Alcoa, TN	Dry groc. dist.	195	New	12	120	Food Plant Eng.
B.K. Foods	Gadsden, AL	Proc. chicken	20	New	2.5	100	—
Borden	Orlando, FL	Milk, dairy products	12	Exp.	1.5	—	The Stellar Group
Borden/Superior Dairy	Austin, TX	Fluid milk	50	New	—	—	Hixson, Fluor Daniel
Boxford Poultry	Fresno, CA	Poultry	—	Exp.	—	—	—
Brookshire Grocery	Tyler, TX	Dist. ctr.	255	Exp.	6.5	—	—
Brown Packaging	South Holland, IL	Food pkg.	15	Exp.	1	15	—
Burns Refrig. Services	Lyndhurst, VA	Frozen food, dry dist.	102	New	—	—	The Stellar Group
Burns Refrig. Services	Waynesboro, VA	Frozen food dist.	104	Exp.	4	—	The Stellar Group
Byerly's	Lake Mills, IA	Soup	—	New	1.3	60	—
Byrne Dairy	DeWitt, NY	Milk, dairy prod.	—	Exp.	4	17	—
C							
Cagle Co.	Collinsville, AL	Poultry	—	Exp.	1.2	230	—
Cain's Coffee	Oklahoma City, OK	Coffee, tea	—	New	2	—	—
Cal-Ida	Gooding, ID	Potato proc.	80	New	—	300	—
California Prison Ind.	Imperial, CA	Meat products	35	New	5	—	Richardson- Voinovich/ A. Epstein
Calva Products	San Joaquin, CA	Feed	—	Exp.	—	—	—
Campbell Soup	Maxton, NC	Soup	—	Exp.	20	—	—
Capri Sun	Fresno, CA	Juice drinks	—	Exp.	—	—	—
Cargill	Memphis, TN	Corn oil	—	Exp.	10	12	Process Systems, Inc.
Cargill	Memphis, TN	HFCS	—	Exp.	—	—	—
Carlin Foods	Gardena, CA	Fruit fillings	27	New	1.7	—	A. Epstein & Sons
Carling Nat. Breweries	Frankenmuth, MI	Beer	—	New	7	60	—
Carnation Co.	Bakersfield, CA	Ice Cream	210	New	53	250	A. Epstein & Sons
Carolina Turkeys	Mt. Olive, NC	Turkey	217	New	36	900	HSD, Inc.
Central Soya	Gibson City, IL	Soy proteins	—	Exp.	—	—	—
Central Soya	Remington, IN	Soy proteins	—	Exp.	—	—	—
Central Valley Dairy	Tulare, CA	Cheese	172	New	20	125	—
Chateau Grand Traverse	Traverse City, MI	Wine, brandy	—	New	1	—	—
Cherry Hill Processors	Bailey, MI	Fruit juices	—	New	1.3	139	—
Chico-San	Gridley, CA	Rice cakes	55	New	—	—	—
Chico-San	Metcalfe, MS	Rice cakes	—	Exp.	1.8	50	—
Chiquita Tropical Prod.	Ft. Pierce, FL	Citrus packing	—	New	—	100	—
Chowchilla Nut Pkg.	Madera City, CA	Nuts	—	Exp.	—	—	—
Church & Dwight	Tiffin, OH	Dairy products	365	New	3.5	15	—
Coca-Cola Bottling	Benecia, CA	Coca-Cola	80	New	—	130	—
Coca-Cola Bottling	Belmont, NH	Coca-Cola	45	Exp.	—	—	—
Columbia Farms	Columbia, SC	Broilers	15	New	—	—	HSD, Inc.
ConAgra Poultry	Falkville, AL	Poultry products	36	New	4	30	—
ConAgra Poultry	Carthage, MO	Poultry products	23	Exp.	9	100	St. Onge, Ruff Assoc.
ConAgra Poultry	Carthage, MO	Poultry products	8	Exp.	—	—	St. Onge, Ruff Assoc.
ConAgra Poultry	Chatanooga, TN	Poultry products	30	Exp.	1.3	128	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Contadina Foods	Hanford, CA	Canned tomatoes dist.	120	Exp.	1.2	—	—
Continental Flavors	Bridgeport, NJ	Flavors	—	New	—	—	—
Continental Smelkinson	Jessup, MD	Food service dist.	240	New	12	250	—
Comland Beef Proc.	Lexington, NE	Cattle proc.	—	Exp.	0.7	105	—
Country Maid	Milwaukee, WI	Salads	34	New	1.3	59	—
Country Skillet Poultry	Dalton, GA	Poultry	—	Exp.	—	100	—
CPC International	Stockton, CA	Corn wet milling	—	Renov., exp.	—	—	—
CPC International	Argo, IL	Corn wet milling	—	Renov., exp.	—	—	Fluor Daniel
CPC International	Asheboro, NC	Dehy. soups, sauces	140	New	12	100	—
Cremosa Cheese	Ocala, FL	Dairy dist.	30	New	2	15	—
Crossett Co.	Saline, MI	Fruit, veg. proc.	—	New	3.1	135	—
C&S Wholesale Grocers	Brattleboro, VT	Frozen food dist.	100	New	6	60	St. Onge, Ruff Assoc.
Cuba Cheese	Cuba, NY	Cheese products	62	Exp.	13	30	—
Cuddy Farms	Marshville, NC	Turkeys	—	New	6.5	—	—
Cuddy Food Products	London, ON	Turkey proc.	150	New	14	290	—
D							
Dad's Cookie Co.	Plant City, FL	Bakery products	—	New	4.5	150	—
Daily, Inc.	Missoula, MT	Bacon	8	New	1.2	—	Austin Co.
Dairymen, Inc.	Greensboro, NC	Milk, dairy prod.	—	Exp.	—	—	Hixson
Dairymen, Inc.	Wilkesboro, NC	Milk, dairy prod.	—	Exp.	—	—	Hixson

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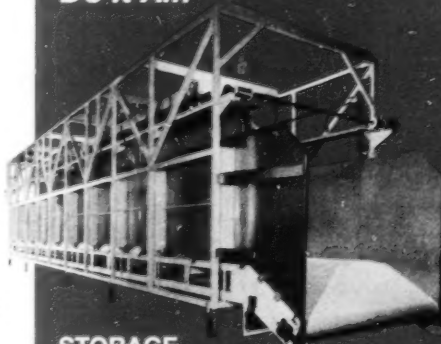
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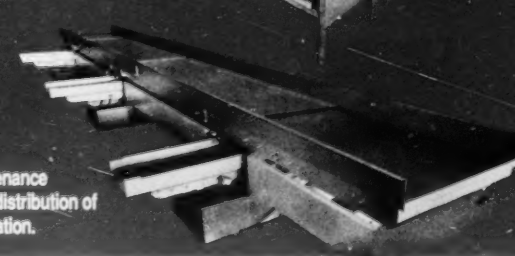
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NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Dairymen, Inc.	Roanoke, VA	Milk, dairy prod.	—	Exp.	—	—	Hixson
David Michael & Co.	Philadelphia, PA	Flavors, stabilizers	15	Exp.	—	—	—
Dean Foods	Eaton Rapids, MI	Pickles	—	New	1.2	20	—
Dean/Reiter	Springfield, OH	Ice cream	15	New	—	—	Hixson
Del Grossi Food	Eugene, OR	Italian cheese	—	New	—	51	—
Delta Catfish	Belzoni, MS	Frozen catfish	—	New	3	100	—
Delta Oil Mill	Jonestown, MS	Cottonseed oil	—	Exp.	2	10	—
DeRosa Pasta	Fremont, NE	No-boil pasta	30	New	—	70	—
Dial Corp.	Montgomery, IL	Fats & oils	—	Exp.	2	—	Austin Co.
Distron Div., Burger King	Greensboro, NC	Burger King dist.	10	Exp.	1	—	The Stellar Group
Dona Ana Spec. Flour	Rincon, NM	Flour	10	New	2.5	20	—
Dot Foods	Mt. Sterling, IL	Dry, refrigerated distributor	116	New	—	—	Nixon Assoc., Star Bldg. Systems
Douglas Enterprises	Miami, FL	Cold storage, dist.	65	New	0.8	10	—
Dubuque Packing	Norfolk, NE	Beef processing	120	New	10.4	400	—
Duche Nut	Chico, CA	Nuts	—	Exp.	—	—	—
Duval Beverage Dist.	Jacksonville, FL	Beer distributor	75	New	3	—	The Stellar Group
E							
East Asiatic Co.	Booneville, MS	Proc. meats	—	Exp.	7.5	100	—
Emerland Storage	Cordele, GA	Nut storage	200	New	6	150	—

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*DEDICATED TO
— EXCELLENCE*

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Ermark	Harrisburg, PA	Liquor-fld. candy	—	New	10	100	—
Excel Corp.	Rock Port, MO	Beef packing	—	New	—	100	—
F							
Fasco Mills	Mendota, IL	—	—	New	—	—	—
Fiorucci Foods USA	Chesterfield, VA	Meat processing	—	New	—	100	—
Fisher Mills	Portland, OR	Flour products	55	New	2.3	7	—
Flavor House Products	Dothan, AL	Nuts, bakery ingrd.	148	New	6.5	148	—
Freeze Point	Haines City, FL	Frozen storage	49	New	1.8	—	A. Epstein & Sons
Freeze Point	Manteno, IL	Frozen storage	100	New	5	—	A. Epstein & Sons
French American Bakery	Hayward, CA	Croissants, cookies	14	New	—	—	Finger & Moy
Fries & Fries	Cincinnati, OH	Flavor R&D	50	New	7	—	Hixson
Frito-Lay	Kern Cty., CA	Snack foods	162	New	—	400	Kaiser Engineers
Frito-Lay	Perry, GA	Snack foods	—	New	—	—	Fluor Daniel
Frito-Lay	Pulaski, TN	Snack foods	—	Exp.	—	—	Hixson
G							
Gallo Vineyards	Portland, OR	Wine dist.	40	New	2.3	50	—
Garden Fresh Foods	Milwaukee, WI	Veg. proc.	100	New	0.8	88	—
General Foods	Duval Cty., FL	Roasted coffee	105	New	2	25	—
General Foods	Mason City, IA	Desserts	160	Renov.	—	—	—
General Mills	Covington, GA	Breakfast cereal	200	New	100	110	—
General Mills	San Joaquin Cty., CA	—	—	Exp.	—	—	—
George's Co.	Butterfield, MO	Poultry proc.	87	New	10	400	—
George's Co.	Cassville, MO	Poultry proc.	87	New	10	400	—
Georgia Feed Proc.	Sylvester, GA	Feed ingredients	—	New	—	50	—
Gilster Co.	Perryville, MO	Cereal products	56	Exp.	—	130	—
Gilster-Mary Lee	Perryville, MO	Cake mix, cereal	30	Exp.	2	—	—
Gold Bond Ice Cream	Ocala, FL	Ice cream novel.	50	Exp.	7	100	—
Gold Bond Ice Cream	Henderson, NY	Ice cream novel.	100	New	—	300	—
Golden Cheese California	Corona, CA	Cheese packaging	1	Exp.	3	10	Pettit Int'l
Golden Cheese California	Corona, CA	Wastewater evap.	7	Exp.	6	—	Pettit Int'l
Golden Cheese California	Corona, CA	Cogeneration	45	Exp.	50	2	Power Systems
Golden State Foods	City Industry, CA	Fresh salads	168	New	5	—	Austin Co.
Gold Kist-Golden Poul.	Sanford, NC	Chicken proc.	65	New	10	325	—
Goldsboro Milling	Goldsboro, NC	Feed mill	—	New	2	—	—
Great Bend Packing	Great Bend, KS	Bacon, boneless ham	25	Exp.	—	100	—
Great Lakes Chemical	Newport, TN	Intense sweetener	—	New	30	100	Process Systems, Inc.
Green Foods	Oxnard, CA	Proc. foods	80	New	8.5	50	—
Griffin Pie	London, KY	Pies	—	Exp.	3.4	35	—
GSE Agri-Products	Baton Rouge, LA	Gluten, alcohol	—	New	60	60	Process Systems, Inc.
H							
Haagen-Dazs	Tulare, CA	Ice cream	30	Exp.	1.9	—	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Hannaford Bros.	S. Portland, ME	Frzn. food dist.	60	New	4	—	St. Onge, Ruff Assoc.
Harker's	Sioux Center, IA	Sausage, frzn. veg.	18	Exp.	3	75	—
Helix Int'l./Dews Labs	Baton Rouge, LA	Rice products	—	New	1	10	—
Hernando Egg Prod.	Brooksville, FL	Eggs	20	New	1	50	—
Heublein Wines	Madera City, CA	Wine	—	Exp.	—	—	—
Hills Bros. Coffee	Suffolk, VA	Coffee	33	New	1	50	—
Hills Pet Products	Bowling Green, KY	Prescription pet foods	100	Exp.	12	—	Sverdrup
Holly Farms Poultry	Monroe, NC	Poultry products	—	Exp.	30	400	—
Holly Farms Poultry	Wilkesboro, NC	Roasted chicken	171	New	15	300	—
House of Raeford	Nesmith, SC	Poultry	—	New	—	200	—
I							
IBP	Council Bluffs, IA	Pork proc.	217	New	8	600	—
IBP	Manchester, IA	Pork proc.	—	New	—	1200	—
IBP	Madison, NE	Pork proc.	—	Exp.	0.2	600	—
Illinois Pork Proc.	Monmouth, IL	Proc. meats	—	New	15.5	700	—
Indi-Bell	Sunflower, MS	Catfish, dog food	—	Exp.	5	6	—
Ind. Cold Storage	Jacksonville, FL	Frozen food refriger. dist.	116	New	5	—	The Stellar Group
Inst. Food House	Florence, SC	Frozen food, perishables	90	New	3	60	St. Onge, Ruff Assoc.
Int'l Seasoning	Harrisonburg, VA	Seas. fm poultry	70	New	10	30	—
Iowa Ham Canning	Oelwein, IA	Proc. hams	—	New	—	50	—
J							
J.M. Smucker	Memphis, TN	Jams, jellies	—	Exp.	5	100	Eilers, Oakley, Chester, Rike L&A Eng. & Equip.
John B. Sanfillipo	Bainbridge, GA	Nuts	—	New	10	200	—
John Morrell	Sioux Falls, SD	Meat packing	—	Exp.	2.1	600	—
K							
K.B. Specialty Foods	Greensburg, IN	Prepared foods	—	Renov.	—	—	Hixson
Keebler	Miramar, FL	Dist. center	37	New	1	—	—
Keebler	Elmhurst, IL	R&D	85	New	5.8	—	A. Epstein & Sons
Keebler	Cincinnati, OH	Baked goods	—	Renov.	—	—	Hixson
Keebler	Haltom City, TX	Snacks	148	New	8.4	—	A. Epstein & Sons
Kellogg	Battle Creek, MI	Cereals	—	Exp.	500	—	Fluor Daniel
Kemp Foods	Duluth, MN	—	—	New	2.1	103	—
Kenlake Foods	Murray, KY	Powdered drinks	—	Exp.	1.5	—	—
Kic'd & Co.	Henderson, NV	Marshmallows	120	New	—	60	—
Kikkoman	Walworth, WI	Soy sauce	—	Exp.	4	—	Austin Co.
Klein Seafood	Baton Rouge, LA	Seafood proc.	—	Reloc., Exp.	—	—	Davy McKee
Kraft	N. Lawrence, NY	Dairy products	—	Exp.	—	—	—
Kroger Co.	Cincinnati, OH	Frzn. novelties	—	Renov.	—	—	Hixson
L							
Lamb Weston	Hermiston, OR	Frozen foods	70	Exp.	5.5	70	—
Land O'Lakes	Ellsworth, IA	Proc. turkey	6	Exp.	1	200	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employ- ees	Architects/ Engineers
Lemig Bros. Bakeries	Vincennes, IN	Bakery products	80	New	3.1	150	—
Lewis Smoked Meats	Chicago, IL	Proc. meats	—	New	—	—	—
Liqui-Dri Foods	Louisville, KY	Biscuit mix, flour	—	Exp.	1	—	—
Louis Rich	Tulsa, OK	Turkey	—	New	—	150	—
Louisiana Crawfish	St. Martinville, LA	Frzn. crawfish	24	New	1.8	—	—
Louisiana Poultry	Winnfield, LA	Poultry	—	New	15	250	—

M

Maple Leaf Farms	Milford, IN	Ducklings	220	Exp.	36	900	HSD, Inc.
Marshall Durbin	Hattiesburg, MS	Poultry proc.	—	Exp.	2.1	—	—
Martin Brower	Pompano Beach, FL	Dist., McDonald's	60	New	2	—	Stellar Grp.
Masstock Int'l	Macon, GA	Milk	—	New	6	—	—
Mazo Lerch Co.	Alexandria, VA	FF dist.	20	Exp.	—	—	St. Onge, Ruff Assoc.
Mazza Cheese	Sumner, WA	Cheese	65	New	—	100	—
McKee Baking	Gentry, AR	Cakes	—	Exp.	5.5	350	—
McKee Baking	Collegedale, TN	Snack cakes	40	Exp.	2	—	—
McKee Baking	Augusta, Cty., VA	Snack cakes	—	New	—	200	Fluor Daniel
Meadowland Creamery	Conroe, TX	Milk, orange juice	120	New	20	—	Hixson
Merchants Distributors	Hickory, NC	Frzn. food dist.	100	New	4.7	—	St. Onge, Ruff Assoc.
Merico, Inc.	Little Rock, AR	Bread, buns	50	Exp.	15	50	Lockwood- Greene

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employ- ees	Architects/ Engineers
Mesa Food Products	Louisville, KY	Mexican chips	—	New	2.5	60	—
Michael G. Davey	Mason City, IA	Desserts	160	New	3.6	—	—
Mid-America Dairymen	Winsted, MN	Whey products	—	New	—	—	—
Mid Valley Dairy	Stanislaus Cty, CA	Dairy products	—	Exp.	—	—	—
Midwest Grain Prod.	Pekin, IL	CO ₂	—	Exp.	—	—	Liquid Carbonic
Miller Brewing	Watertown, WI	Hops	20	New	11.6	—	—
Moark Products	Grand Junction, CO	Egg processing	—	New	3	30	—
Mondo Products	Rome, GA	Confections	30	New	1.5	10	—
Monitor Sugar	Bay City, MI	Sugar, molasses	—	New	38	260	—
Mrs. Smith's	Rossville, TN	—	—	Renov., exp.	—	—	Fluor Daniel
N							
Nabisco	Naperville, IL	Cereal	—	Exp.	30	—	Sverdrup
National Distillers	Frankfort, KY	Whiskey, feed	—	Exp.	13	70	—
Nebraska Sioux Lean Beef	Gordon, NE	Meat packing	—	New	2.8	100	—
Nestle-Beich Candies	Bloomington, IL	Candy	9	Exp.	1.1	150	—
Nestle Co.	Fulton, KY	Chocolate	16	Exp.	10.5	—	—
Newly Wed Foods	Springdale, AR	Food coatings	—	New	8.5	60	—
New Tech Snacks	Joliet, IL	Pasta snacks	21	New	8	—	Austin Co.
Nor-Cal Wild Rice	Yolo, CA	Rice	—	Exp.	—	—	—
NorOats	St. Ansgar, IA	Racehorse feed	—	New	4.5	4	—
Nutri-Cheese	Oak Park, IL	Analog cheese	16	New	5	—	Austin Co.



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NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft.	Type Project	Est. Cost (\$ millions)	Employ- ees	Architects/ Engineers
O							
Ogilvie Mills	Keokuk, IA	Gluten	—	Exp.	—	—	Process Systems, Inc.
Oldenburg Brewery	Fort Mitchell, KY	Beer	—	New	7.5	230	—
Olivieri Ravioli	Eugene, OR	Pasta	70	New	5	40	—
Owensboro Grain	Owensboro, KY	Grain proc.	—	Exp.	4	—	—
OK Foods	Heavener, OK	Poultry proc.	—	New	—	300	—
Ocean Spray	Babcock, WI	Fresh fruit	—	Exp.	—	—	Hixson
P							
Pennant South	Dalton, GA	Frzn. bakery mix	—	New	2	25	—
Pepperidge Farm	Lakeland, FL	Biscuits	—	New	45	350	—
Perdue Farms	Manson, NC	Eggs	30	New	7	30	—
Perdue Farms	Emporia, VA	Deboned chicken	44	New	8	500	—
Piggly Wiggly Southern	Vidalia, GA	Grocery distribution	28	Exp.	1	—	The Stellar Group
Plaza Provision	San Juan, PR	Wine dist.	39	Exp.	—	235	—
Plumrose	Bonneville, MS	Boneless ham	58	Exp.	7	80	—
Potomac Food Dist.	Stafford, VA	Dry, frzn. dist.	30	New	1.5	30	St. Onge, Ruff Assoc.
Power Packaging	Manteno, IL	Food packaging	100	New	3.6	—	A. Epstein & Sons
Premier Distributing	Albuquerque, NM	Beer dist.	74	New	2.5	100	Engstrom Assoc./Armco Bldg. Systems
Premium Dairy Prod.	Decatur, AL	Dairy products	36	New	—	28	—
Processed Foods	Milbank, SD	Frozen foods	23	New	1.6	20	—
Provesta Corp.	Bartlesville, OK	Fermented products	—	New	—	—	—
Publix Super Markets	Boynton Bch., FL	Dry groc. dist.	425	New	20	120	Food Plant Eng.
Q							
Quaker Oats	St. Joseph, MO	Cereal	—	Exp.	—	—	—
Quaker Oats	Marion, OH	Pet food	—	Exp.	—	—	Austin Co.
Quaker Oats	Jackson, TN	—	—	Exp.	—	—	Fluor Daniel
Quality Foods	Little Rock, AR	Poultry	—	Exp.	8.8	124	—
Queen Anne Candy	Shorewood, IL	Chocolate candy	—	New	—	130	—
R							
Ralston Purina	Denver, CO	Pet food	—	Renov.	1 +	—	Davy McKee
Ralston Purina	Dunkirk, NY	Pet food	—	Renov.	1 +	—	Davy McKee
Ralston Purina	Sharonville, OH	Cereal	—	Exp.	—	—	MK-Ferguson
Randolph Packaging	Streamwood, IL	Sausage	52	New	2	69	—
R. B. Rice Co.	Baxter Springs, KS	Salads, desserts	40	New	2	60	Emil Bayerl Summit Bldgs.
Rice Snacks	Jonesboro, AR	Rice snacks	—	New	1	35	—
Rich Products	Saugatuck, MI	Frozen desserts	—	New	2.5	100	—
Richwood Meats	Merced, CA	—	—	Exp.	—	—	—
Riverbend Int'l.	Yuma, AZ	Tomato proc.	—	Exp.	5.5	—	—
Robinson Cone	Burlington, ON	Ice cream cones	—	New	1.3	—	—
Rocco Farm Foods	Shenandoah Cty., VA	Chicken proc.	100	Exp.	11	—	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Rocco Turkeys	St. Paul's, NC	Turkey proc.	—	New	15	300	—
Rock River	Wauconda, IL	—	—	New	—	—	—
Rose Acre	Winterset, IA	Eggs	—	New	11	118	—
Rove Enterprises	Miami, FL	Proc. foods	—	New	2	80	—
Royal Dutch Products	DeLand, FL	Dutch cheese	50	New	8	30	—
Royal Gulf Tuna Swordfish	Terrebonne Psh., LA	Fish proc.	—	New	4	—	—
Rudy's Farm Co.	Little Rock, AR	Bakery products	—	Exp.	—	40	—

S

Safeway Stores	Emporia, KS	Canned pet food	41	New	—	25	—
Sara Lee	Tarboro, NC	—	—	New	—	—	Fluor Daniel
Savannah Food Svs.	Jackson, MI	Proc. sugar	25	New	1.5	25	—
Schuler Foods	Marshall, MI	Soups, sauces	—	New	3	75	—
Schwann Enterprises	Lawton, OK	Frozen foods	—	New	2	—	—
Seaboard Tampa Terminals	Tampa, FL	Frzn. food, refriger. dist.	450	New	6	—	The Stellar Group
SeaFest Products	Motley, MN	Surimi products	43	New	7	—	—
Seafood Cannery	Steinhatchee, FL	Crab proc.	—	New	0.2	60	—
Setton Int'l. Foods	Madera, CA	Pistachios	—	New	—	—	—
Seven-Up/RC Bottling	Lenexa, KS	Soft drinks	57	New	2.5	—	—
Shedd's Food Products	Baltimore, MD	Dist. center	28	Exp.	2.9	25	—
Simmons Industries	Southwest City, MO	Poultry	26	Exp.	—	—	—
Simon Bros. Bakery	Skokie, IL	Bakery products	28	Exp.	0.7	—	—
Smith's Frozen Foods	Weston, OR	Frozen veg.	—	Exp.	5	—	—
Spectrapak	Riverside, CA	Ice cream novelties	23	New	—	50	—
Staley Continental	Louden, TN	HFCS	—	Exp.	—	—	Process Systems, Inc.
Stilwell Foods	Stilwell, OK	Frozen foods	—	Exp.	—	64	—
Stouffer Foods Corp.	Springville, UT	Frozen entrees	360	New	75	1200	—
Stout Enterprises	Laurinberg, NC	Feed mill	—	Exp.	4	—	—
Stroh Brewery Co.	Memphis, TN	Malt coolers	—	Exp.	—	—	—
Sugiyo USA	Anacortes, WA	Seafood	—	New	9.6	200	—
Sugiyo USA	Wenatchee, WA	Seafood paste	—	New	25	200	—
Sunfield Foods	Sacramento, CA	Health foods	52	Exp.	—	25	—
Sunpac Foods	Brampton, ON	Pet food	100	New	—	—	—
Sunshine Feed Mills	Halifax Cty., VA	Dog, cat food	60	New	4	100	—

T

Takeda USA	Wilmington, NC	Vitamin C	—	New	70	—	Davy McKee
Teepak	Danville, IL	—	—	New	—	—	Fluor Daniel
Tholstrup Cheese	Norton Shores, MI	Spec. cheese	21	New	2.6	20	—
Tombstone Pizza	Sussex, WI	Pizza	54	Exp.	6	55	—
Tropicana Products	Bradenton, FL	Orange juice	53	Exp.	—	—	—
Tulsa Turkey Products	Tulsa, OK	Turkey proc.	56	New	—	100	—
Tyson Foods	Ashland, AL	Poultry products	—	Exp.	3	350	—
Tyson Foods	Attalla, AL	Poultry feed	20	New	5	75	—
Tyson Foods	Blountsville, AL	Poultry products	—	Exp.	8	100	—
Tyson Foods	Ivlee, AL	Feed mill	—	New	5	25	—
Tyson Foods	Green Forest, AR	Poultry products	—	Exp.	13.7	1000	—
Tyson Foods	Rogers, AR	Poultry products	—	Exp.	5	—	—
Tyson Foods	Van Buren, AR	Poultry products	—	Exp.	4.9	200	—

NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft.	Type Project	Est. Cost (\$ millions)	Employ- ees	Architects/ Engineers
Tyson Foods	Broken Bow, OK	Poultry products	—	New	—	250	—
U							
UBA Trading Co.	Cambridge, ON	—	60	New	1.5	60	—
Uncle Ben's	Greenville, MS	Rice milling	—	Exp.	16.6	50	—
Uncle Wong Food Products	Radisson, NY	Frzn. Chinese foods	40	New	3	120	—
Uni-Kool	Monterey Cty., CA	Ice	—	Exp.	—	—	—
United Foods	Ogden, UT	Frozen veg. dist.	200	New	4	60	—
United Refrig. Services	Birmingham, AL	Frozen foods	28	Exp.	1.5	—	The Stellar Group
United Refrig. Services	Atlanta, GA	Frozen foods	84	Exp.	4	—	The Stellar Group
U.S. Cold Storage	Lumberton, NC	Frozen meat, poultry	115	New	6	—	The Stellar Group
U.S. Cold Storage	Nashville, TN	Frozen foods	90	New	5	—	The Stellar Group
V							
Val Blatz Brewery	Milwaukee, WI	Beer	40	New	6	15	—
Vandervoort Dairy	Ft. Worth, TX	Fluid Milk	—	Renov.	—	—	Hixson
Van Duyn Choc. Shops	Eugene, OR	Chocolate	100	New	5	300	—
Very Special Chocolate	Los Angeles, CA	Choc. candy	—	Exp.	—	—	—

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It takes time to plan and formulate new products, even longer to invent and refine process technology to make them.

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NEW FOOD PLANTS

Company	Plant Location	Primary Product	M Sq. ft	Type Project	Est. Cost (\$ millions)	Employees	Architects/Engineers
Vita Food Products	Bronx, NY	Fish processing	45	New	4.5	—	A. Epstein & Sons
Vitner Chips	Loves Park, IL	snack foods	—	Exp.	0.6	80	—
Viasic Foods	Greenville, MS	—	—	Exp.	1.9	60	—
W							
Waterloo Meat Packing	Waterloo, IA	Meat packing	—	New	25	250	—
Wayne Poultry	Union Springs, AL	Poultry products	—	Exp.	—	100	—
Wayne Poultry	Denville, AR	Poultry products	—	Exp.	2.5	125	—
Westco Drying	Desert Hot Springs, CA	Acoustic drying	12	New	2.5	12	U.S. Dev. Corp.
Western Idaho Potato	Jerome, ID	Frzn. potato prdts.	—	New	—	120	—
Western KY Coca-Cola	Bowling Green, KY	Coca-Cola	—	Exp.	1.5	—	—
Western Sugar	Ft. Morgan, CO	Sugar-beet proc.	—	New	1.4	—	—
Wilson Foods	Oklahoma City, OK	Edible oil	—	Renov.	5.8	—	Process Systems, Inc.
Wis-Pak	Watertown, WI	Soft drinks	—	Renov.	—	—	MK-Ferguson
W. J. Powell	Thomasville, GA	Frozen foods	300	New	—	—	—
Wornick Co.	New Braunfels, TX	Microwave entrees	80	New	—	175	—
Wyoming Meat Packers	Riverton, WY	Meat packing	—	New	4	300	—
Z							
Zachary Confections	Frankfort, IN	Chocolate spec.	—	New	—	100	—

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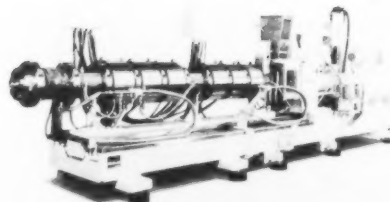
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